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most profitable pork,' and that 'pigs ought never to come till June,' will, no doubt, be allowed to constitute permanent and important improvements in the branches of agriculture and husbandry.

ART. XXII.—*An Arithmetic on the plan of Pestalozzi, with some Improvements.* By Warren Colburn. Boston: Cummings and Hilliard. 1821. pp. 143. 18mo.

WE shall make no apology for calling the attention of our readers to a subject of so humble a nature as elementary instruction in Arithmetic, but such as is contained in the great merit of the book before us.

Notwithstanding every thing that has been said and done of late, in reference to the subject of education, the modes of instruction are still very far behind the actual state of science, and none of them farther than those made use of in arithmetic. The books now almost universally used, and many of the notions which prevail, are of the same sort that were in use and prevailed, when young children were thought quite incapable of learning arithmetic. A notice of so rare a thing as a book on the subject, written by a man of talents, and perfectly adapted to its purpose, cannot be thought useless, while books are used in almost all our schools, suited neither to the comprehension of children, nor, if they could be comprehended, to the end for which they are designed.

The difficulties which, by the prevalent mode of teaching, are thrown in the way of the learner, are well noticed in the preface to this volume.

'The pupil, when he commences arithmetic, is presented with a set of *abstract* numbers, written with *figures*, and so large that he has not the least conception of them, even when expressed in *words*. From these he is expected to learn what the figures signify, and what is meant by addition, subtraction, multiplication, and division; and, at the same time, how to perform these operations with figures. The consequence is, that he learns only one of all these things, and that is, how to perform these operations on figures. He can perhaps translate the figures into words; but this is useless, since he does not understand the words themselves. Of the effect produced by the four fundamental operations he has not the least conception.'

These difficulties, with others, arising from the manner in which the study is pursued, and the want of capacity in the instructors, render arithmetic, instead of a most simple and practical thing, one of the most irksome and unintelligible that can be presented to the young mind. Mr Colburn's book is liable to none of these objections. A child sees, at once, from the examples, that arithmetic is something which he can understand, and which will be of use to him.

In another respect, this book is likely to do a great deal of good. It contains excellent instruction for teachers. Directions are often as much required for them as for their pupils. The discipline of the infant mind is almost the only thing for directing which no apprenticeship, no experience, and very little information are in this country, at least, supposed to be required.* A man is often deemed capable of teaching, for the very reason that he has shown himself incapable of any thing else. The only part of us, which is immortal, is abandoned to the care of such as are unable to do aught for the body; and he who has no memory, nor taste, nor power of reasoning himself, is to communicate them, or develop and show the best means of improving them, in another. Now and then, a poor student in college, who was waked from the lethargy of ignorance by the pressure of adversity, and has been nursed in her arms, who has learned how to teach from the necessity of teaching himself, may stumble upon a natural method; and even then he is compelled to abandon his hope of improvement, from finding books, and the habits of his pupils and common opinion, opposed to him. These are obstacles which it is not easy to overcome. There are no books which contain the results of the experience of others. These have not been recorded in our language; and a person, on beginning to instruct, is very much in the condition of one who should begin an art or profession, which had never been exercised before. He is ignorant of the material he is to work upon, the instrument he is to use, and the effect to be produced. To such a person, the practical views contained in Mr Colburn's

* In many parts of Germany there are excellent schools for schoolmasters. An institution of this kind, of high repute, is supported by the grand duke of Saxe-Weimar. This is a state of about 200,000 inhabitants. How does the support of the institution of which we speak, in its little metropolis, compare with the Vandal proposal made in the legislature of Massachusetts, at its last session, to abridge the provisions made by our laws for the support of education!

sensible preface, and the directions in the key will be of great use.

These directions and the arrangement of the examples are so excellent, that one hardly need understand the subject previously ; if he will but go straight forward in the path pointed out, he will teach exceedingly well.

There are two ways in which the book may be used. The first is with the plates which accompany it, and which are intended for children who are beginning the study. These render the solution of questions practical, as well as the questions themselves. We shall not describe the use of these, nor the particular parts of the plan, which has already been published under the disguise of a disgusting book by Neef. It is sufficient to observe, that the difficulties are so introduced, that one **only** occupies the attention of the pupil at once. After having gone through the examples with the plates, which may be done by children of eight or nine years, the pupil will be able, by means of the plates, to solve readily and intelligibly, most of the questions that commonly occur, in which the numbers are small.

The same examples, in the same order, proposed to be solved without the slate, or any other mechanical assistance whatever, furnish an intellectual exercise, which may be of great use to pupils in any stage of their education.

We have no doubt that Mr Colburn's book will do much to effect an important change in the common mode of teaching arithmetic ; and of its speedy adoption the rapid sale of the first edition, and its great intrinsic merit, give the highest promise. We understand that a second edition, still farther improved, is in the press ; and that the author intends to publish another little volume for the especial use of older pupils.

We hope Mr Colburn will go on in making school books, and, by furnishing one upon a similar plan, for geometry, for drawing, and for algebra, will afford the means of giving instruction in the better sort of schools an entirely new character.